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CHOI, LING SIU				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/570,057

Applicant(s)

SULTAN ET AL.

Examiner

Ling-Siu Choi

Art Unit

1796

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-893)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The request filed on 04/13/2009 for a Request for Continued Examination under 37 CFR 1.114 based on parent Application No. 10/570,057 is acceptable and a RCE has been established. An action on the RCE follows. Claims 12-16 were cancelled and claims 1-11 and 17 are now pending.

Claim Rejections - 35 USC § 112

2. **The following is a quotation of the second paragraph of 35 U.S.C. 112:**

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a

question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 5 recites the broad recitation "the amount of high density polyethylene is 15-35 wt.-%", and the claim also recites "preferably 20-30 wt.-%" which is the narrower statement of the range/limitation.

Claim Analysis

4. Summary of Claim 1:

A <u>pipe</u> made of a crosslinkable polyethylene composition containing	
	a crosslinkable high-pressure ethylene silane copolymer resin having a content of silane of about 0.1 to 10 wt-% and at least one silanol condensation catalyst
wherein the ethylene silane copolymer resin has a density of $> 925 \text{ kg/m}^3$	

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borke et al. (US 2005/0049343 A1) in view of Swarbrick et al. (US 4,117,195).

Borke et al. disclose a crosslinkable, flame retardant polyolefin insulation composition having improved abrasion resistance, comprising: (A) 30 to 90 wt% of high density silane-containing polyethylene base resin selected from the group consisting of (a) a blend of a bimodal **high density polyethylene resin** having a density of 0.940 to 0.960 g/cm³ with an **ethylene-silane copolymer** and (b) a bimodal high density polyethylene resin having a density of 0.940 to 0.960 g/cm³ grafted with a silane monomer; (B) 5 to 70 wt% of flame retardant; and (C) **0.01 to 1 wt% of silanol condensation catalyst**, wherein the ethylene-vinyltrialkoxysilane copolymer is a copolymer of ethylene with **0.25 to 7.5 wt% vinyltrimethoxysilane** or vinyltriethoxysilane and has a **melt index of 0.01 to 20 g/10 min** (claims 1 and 7). Borke et al. further disclose that the weight ratio of the bimodal high density polyethylene resin to the ethylene-vinyltrialkoxysilane copolymer ranges from 4:1 to 1:4 (claim 2). It is noted that ethylene-VTMO (vinyltrimethoxysilane) copolymer used in Example 1 has density of 0.0225 g/cm³; MI of 1.5 g/10 min; and 1.7 % VTMO ([0060]). It is also noted that when the amount of VTMO decreases, the density will increase due to the better packing of the ethylene-VTMO copolymers. Thus, the amount of VTMO lower than 1.7 wt% (the amount of VTMO in ethylene-VTMO copolymer

can range from 0.25 wt% to 7.5 wt%) would increase density of the ethylene-VTMO copolymer by more than 0.0025 g/cm^3 ($0.925 - 0.9225$).

The difference between the present claims and the disclosure of Borke et al. is the requirement the composition being processed into a pipe.

Swarbrick et al. disclose a cross-linked extruded product obtained by a process comprising: (A) metering into a screw extrusion machine a polyethylene with proportionate amounts of compounding ingredients comprising a hydrolysable unsaturated silane, a free-radical generator, and a silanol condensation catalyst; (B) blending the compounding ingredients with the polyethylene in a first zone of the extruder to form a mixture and then heating the mixture in a second zone downstream of the first zone until silane groups have been grafted to the polyethylene, the amount of the free-radical generator being sufficiently low to limit direct free-radical cross-linking to a level that will not prevent extrusion of the material; (C) extruding the mixture directly out of the extruder through an extrusion die to form an elongate product of a required final shape which reads on a pipe; and (D) subjecting the elongate product to the action of moisture until the polymer therein is cross-linked (Example 1; claim 1). In view of the compositions of Borke et al. and Swardbrick et al. being substantial identical, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a pipe from the composition disclosed by Borke et al. and thereby obtain the present invention.

7. Claims 1-3, 5-11, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keogh (US 4,707,520) in view of Swarbrick et al. (US 4,117,195).

Keogh discloses a composition comprising (A) a preformed, thermoplastic polymer based on a major proportion of **ethylene**, the thermoplastic polymer having pendant silane moieties of the formula: **CH₂ = CH - Si(V)((V)(OR)**, wherein R is a straight chain C₄₋₁₈ hydrocarbon radical or a branched chain hydrocarbon C₃₋₁₈ radical; each V is a hydrocarbon C₁₋₁₈ radical or an -OR radical; and (B) **about 0.1- 5 wt% metal carboxylate as a silanol condensation catalyst**, wherein **the amount of silane is about 0.05-5 wt% and the polymer has a density of about 0.92- 0.94 g/cm³** (col. 5, Formula V; col. 6, line 68; col. 7, lines 1-3; claim 1).

The difference between the present claims and the disclosure of Keogh is the requirement of a pipe made from the composition.

Swarbrick et al. disclose a cross-linked extruded product obtained by a process comprising: (A) metering into a screw extrusion machine a polyethylene with proportionate amounts of compounding ingredients comprising a hydrolysable unsaturated silane, a free-radical generator, and a silanol condensation catalyst; (B) blending the compounding ingredients with the polyethylene in a first zone of the extruder to form a mixture and then heating the mixture in a second zone downstream of the first zone until silane groups have been grafted to the polyethylene, the amount of the free-radical generator being sufficiently low to limit direct free-radical cross-linking to a level that will not prevent extrusion of the material; (C) extruding the mixture directly out of the extruder through an extrusion die to form an elongate product of a required

final shape which reads on a pipe; and (D) subjecting the elongate product to the action of moisture until the polymer therein is cross-linked (Example 1; claim 1). In view of the compositions of Borke et al. and Swardbrick et al. being substantial identical, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a pipe from the composition disclosed by Keogh and thereby obtain the present invention.

Response to Arguments

8. Applicant's arguments filed 04/13/2009 have been fully considered but they are not persuasive.

The present rejections are based on the new ground with the same prior art references cited in the previous Office Action. The reason for such new ground rejections is presented in the above rejections.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ling-Siu Choi/

Primary Examiner, Art Unit 1796

June 5, 2009

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